Virtual Tour

Prescott Active Management Area

2200 East Hillsdale Road
Prescott, AZ 86301
(928) 778-7202
www.azwater.gov

General Groundwater Facts

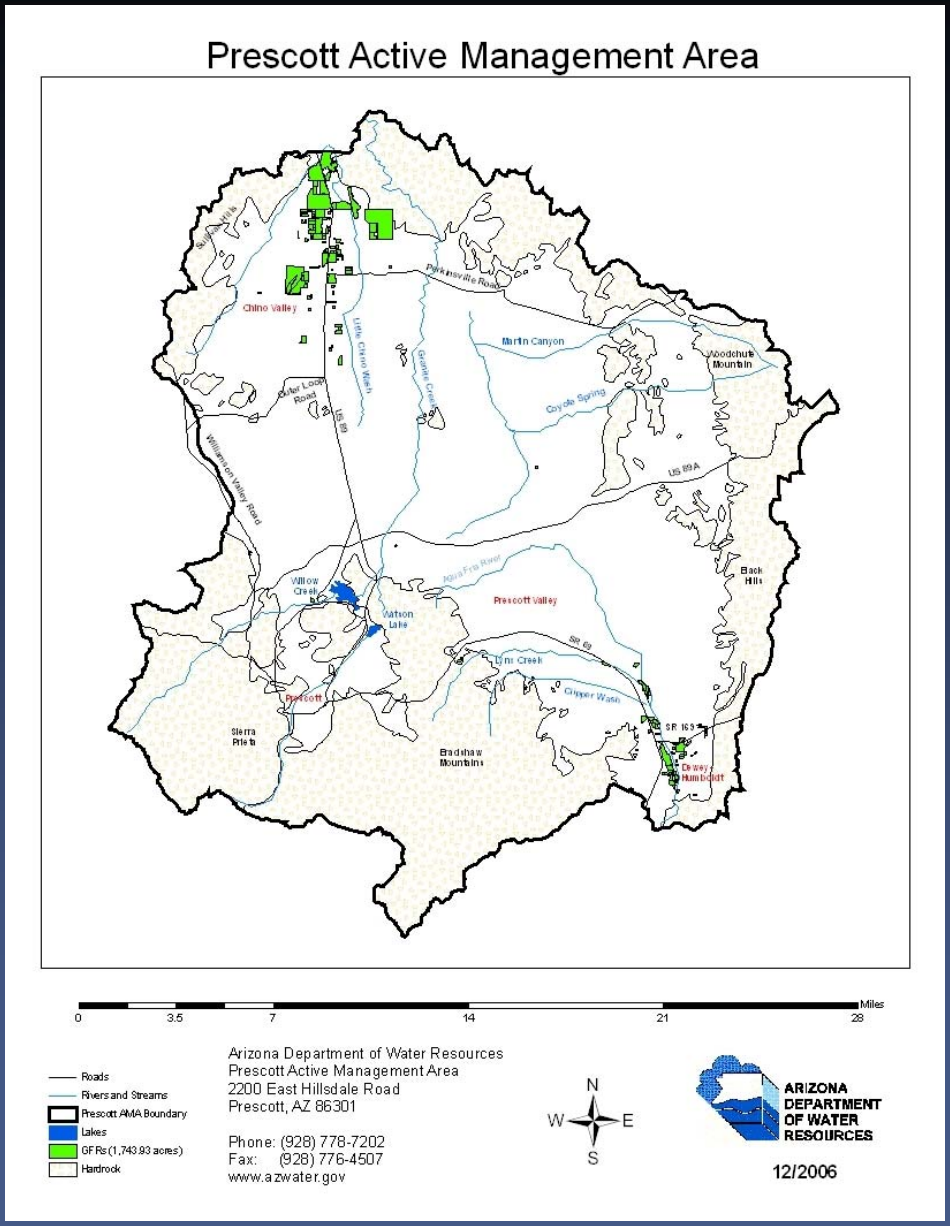
- The Groundwater Management Code was passed in June of 1980 and established the four initial Active Management Areas (AMA): Phoenix, Tucson, Pinal and Prescott.
- The Prescott, Phoenix and Tucson AMAs have a goal of safe-yield by 2025.
- New AMAs can be designated either by determination by the director (45-412) or by petition of 10% of the registered voters within the boundary of the proposed AMA (45-415).
- Each AMA shall have a groundwater user's advisory council (GUAC) of five members who are appointed by the Governor.

Active Management Areas (AMA) and Irrigation Non-expansion Areas (INA)

Prescott AMA	485 mile^2 ~ 20,000 AF water use
Santa Cruz AMA	750 mile^2 ~ 20,000 AF water use
Tucson AMA	3,800 mile^2 ~ 300,000 AF water use
Pinal AMA	4,000 mile^2 ~ 800,000 AF water use
Phoenix AMA	5,600 mile^2 ~ 2 million AF water use

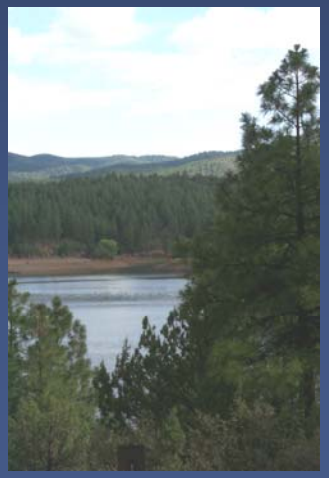
Prescott AMA

Virtual Tour



Prescott AMA

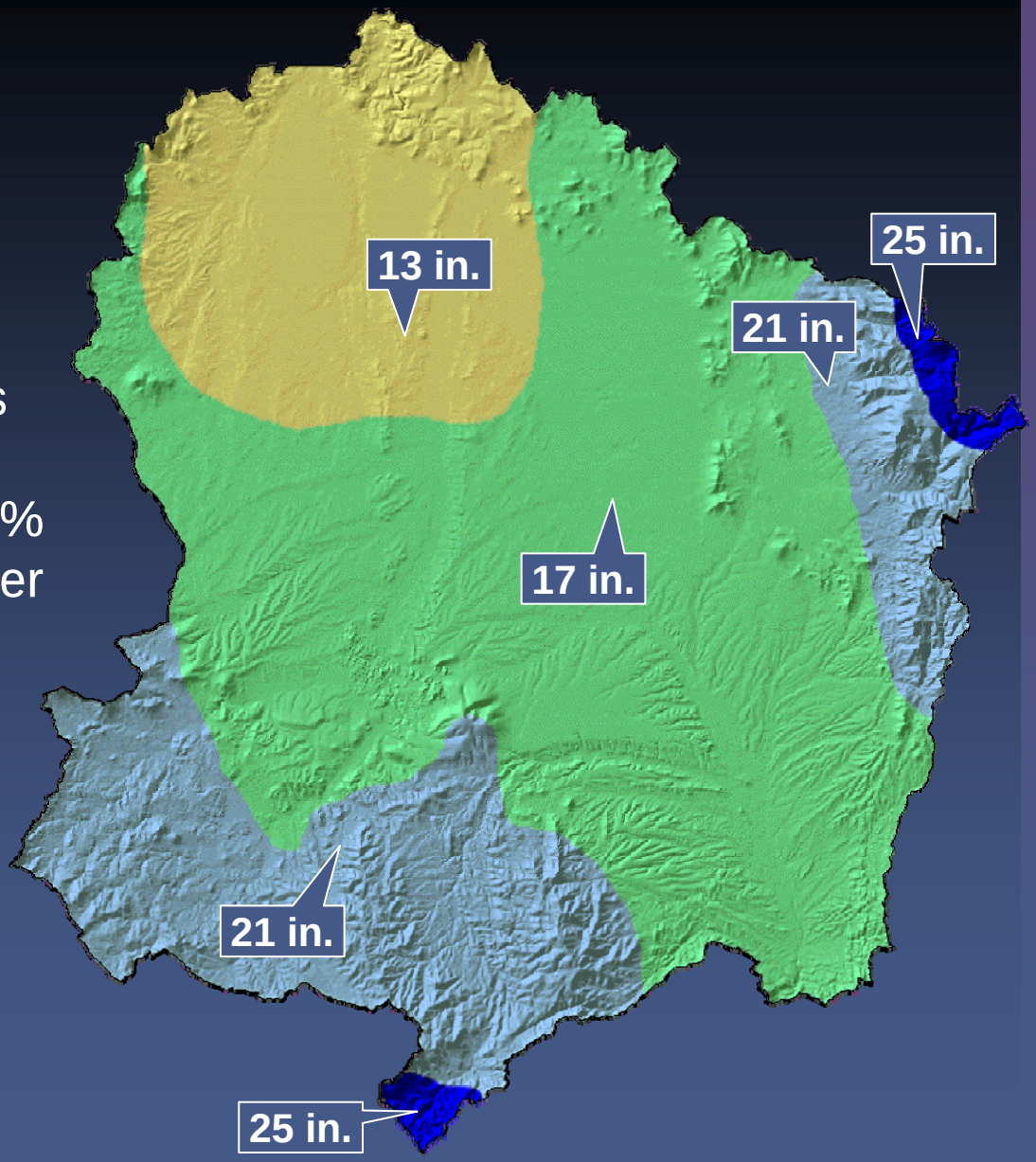
- The Prescott AMA, 100 miles north & west of Phoenix, comprises 485 square miles in central Yavapai County, Arizona
- Elevation ranges from 4400’ to 7800’ above sea level
- Vegetation varies from high desert grasslands to conifer forests
- Broad alluvial basins ringed by fault block mountains
- Precipitation varies from 13 to 25 inches per year
- 2,900,000 acre feet of groundwater in storage in local sub-basins*
- The 2003 to 2004 mean annual water-level decline rate was -2.7 feet*



*Prescott Active Management Area 2003-2004 Hydrologic Monitoring Report

Precipitation

- Widely varying precipitation events in the AMA are responsible for 100% of the natural aquifer recharge



Prescott AMA Sub-basins

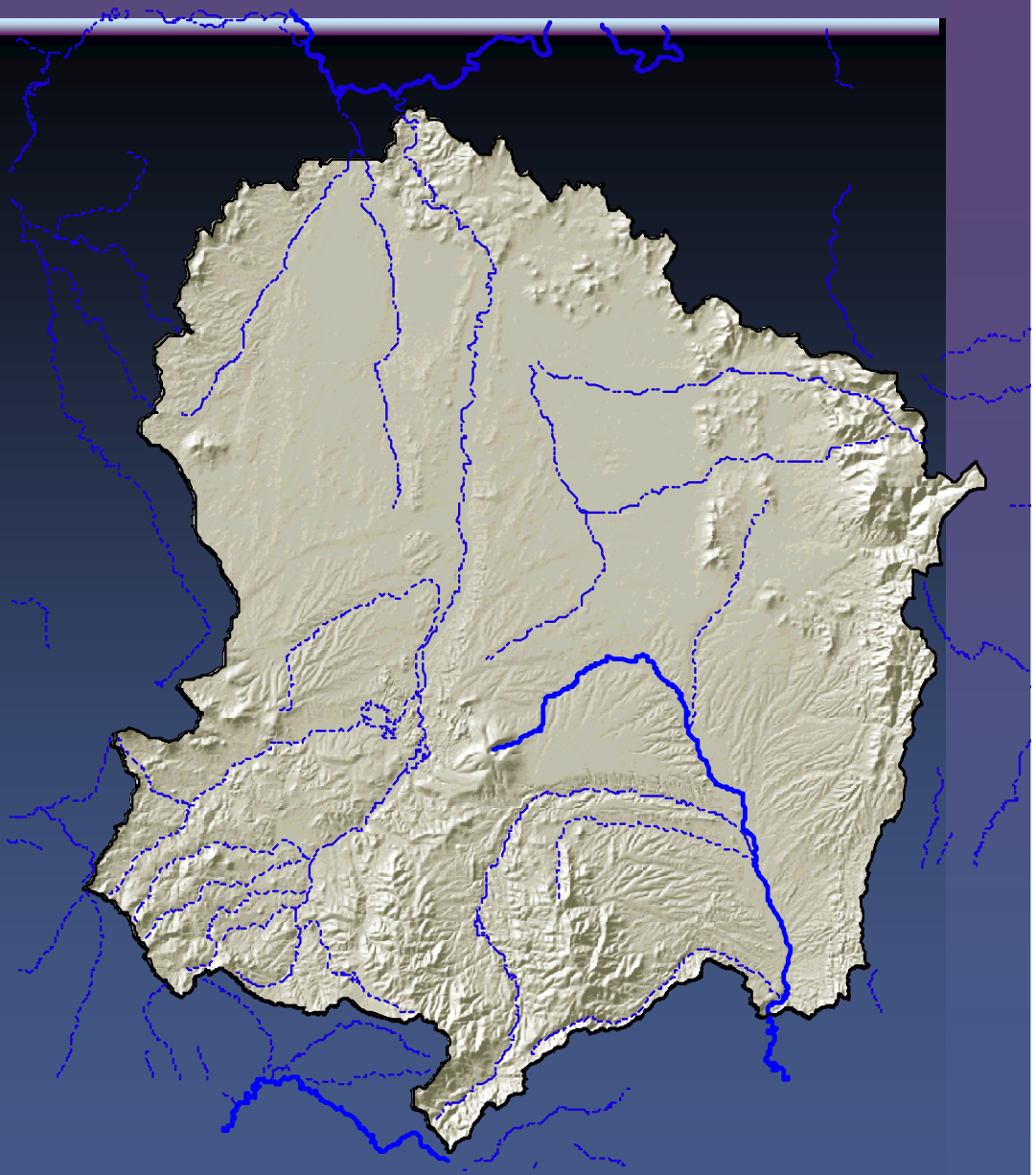
- Groundwater moves southeasterly in the Upper Agua Fria subbasin and northeasterly in the Little Chino sub-basin

Rivers & Streams

- Verde River
  Big Draw
  Little Chino Wash
  Granite Creek

- Agua Fria River
  Lynx Creek
  Clipper Wash

- Hassayampa River



2003 Water Budget
Prescott AMA

Groundwater Inflows	
Natural Recharge	6,600
Incidental Recharge	2,020
Artificial Recharge:	
City of Prescott	3,480
Prescott Valley	1,740
Total Inflows	13,840

Groundwater Outflows	
Groundwater Pumpage:	
Non-Exempt wells	19,160
Exempt Wells	1,830
Groundwater Discharge:	
Underflow to Big Chino	1,800
Del Rio Springs Discharge	1,050
Agua Fria Baseflow	1,300
Total Outflow	25,140

Inflow - Outflow = Change in Storage
13,840 – 25,140 = -11,300 acre-feet (overdraft)

Total Groundwater Pumped (1990-2004)

Highest Volume = 21,815 AF

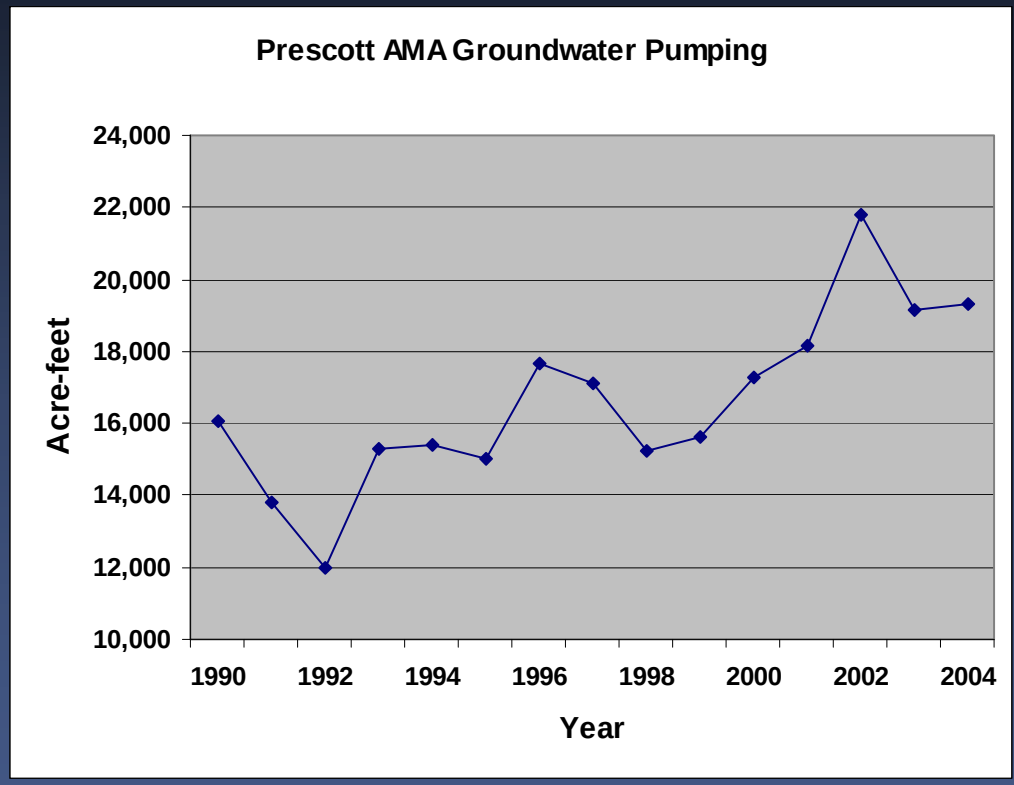
Lowest Volume = 12,007 AF

Average over last 15 years = 16,600 AF

Average over last 5 years = 19,148 AF

Pumping from exempt wells is estimated to be approximately 2,000 AF

Over the last 5 years, the combined annual pumping from exempt and non-exempt wells is approximately 21,148 AF of groundwater.



Changes in Water Levels in Wells in the Prescott AMA

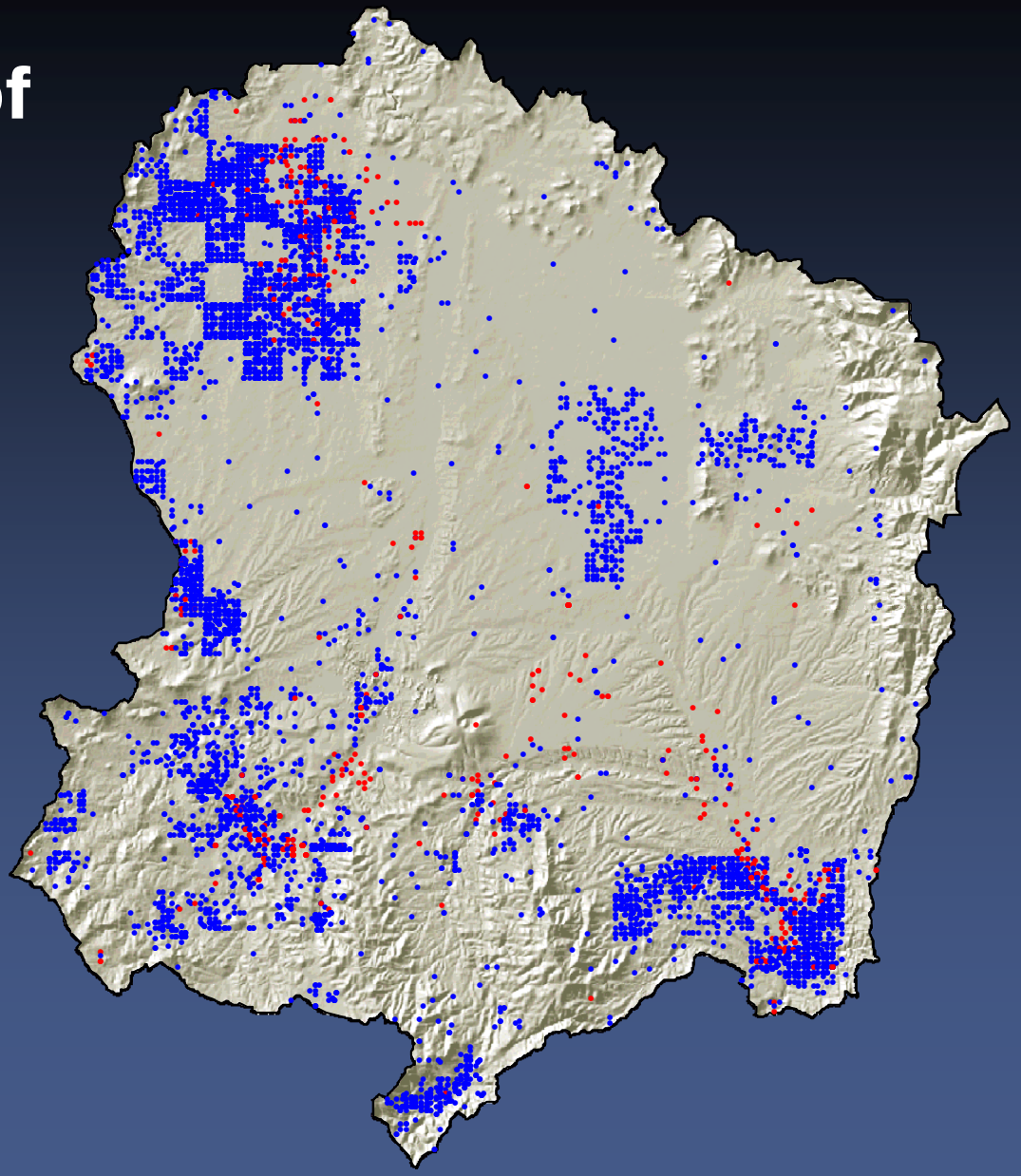
Period of Change	Wells showing Increases in water levels (% of whole)	Wells showing Decreases in water levels (% of whole)	Wells showing no change in water levels (% of whole)
2003-2004	10	90	0
2002-2003	22	76	2
2001-2002	12	87	1
2000-2001	10	89	1
1999-2000	24	73	3

For 2003-2004, the maximum and minimum increases were 16.5 and 0.2 feet respectively. The maximum and minimum decreases were -31.9 and -.1 feet, respectively.

Source: Prescott AMA 2003-2004 Hydrologic Monitoring Report

Distribution of Wells in the Prescott AMA

Year	# of Wells
1985	4,463
1995	7,267
2006	11,854



Non-groundwater Supplies Currently Available / Used within the Prescott AMA

Surface water (limited)

Effluent (via direct delivery and through recharge)

AWS credits from the extinguishment of groundwater rights

Anticipated future water supply:

Groundwater transported into the AMA from the Big Chino Sub-basin

Prescott AMA Safe-yield Goal

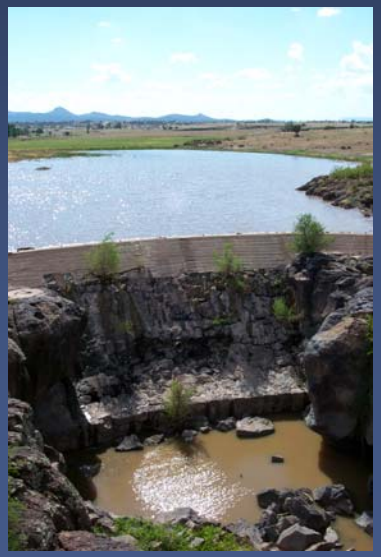
Safe-yield is [a] groundwater management goal which attempts to achieve and thereafter maintain a long term balance between the amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial recharge in the active management area. A.R.S. § 45-561(12)

Consequences of Long Term Non-Safe-yield Conditions

- Groundwater storage capacity is reduced
- Future reliability of water supplies is less certain
- Water levels decline
- Wells may require deepening
- Water quality problems may increase
- Wells may go dry
- Pumping and drilling costs increase
- Natural discharge to springs and streams diminish
- Land subsidence and earth fissuring may occur

Challenge to Safe-yield

In order to achieve safe-yield by 2025, the AMA must expand its efforts to maximize the use of renewable water supplies, optimize water conservation and explore options to develop alternative non-AMA water supplies, including groundwater from the Big Chino Sub-basin.



Big Chino Sub-basin

The Big Chino Sub-basin of the Verde River groundwater basin currently represents the largest source of alternative water supply for the Prescott AMA.

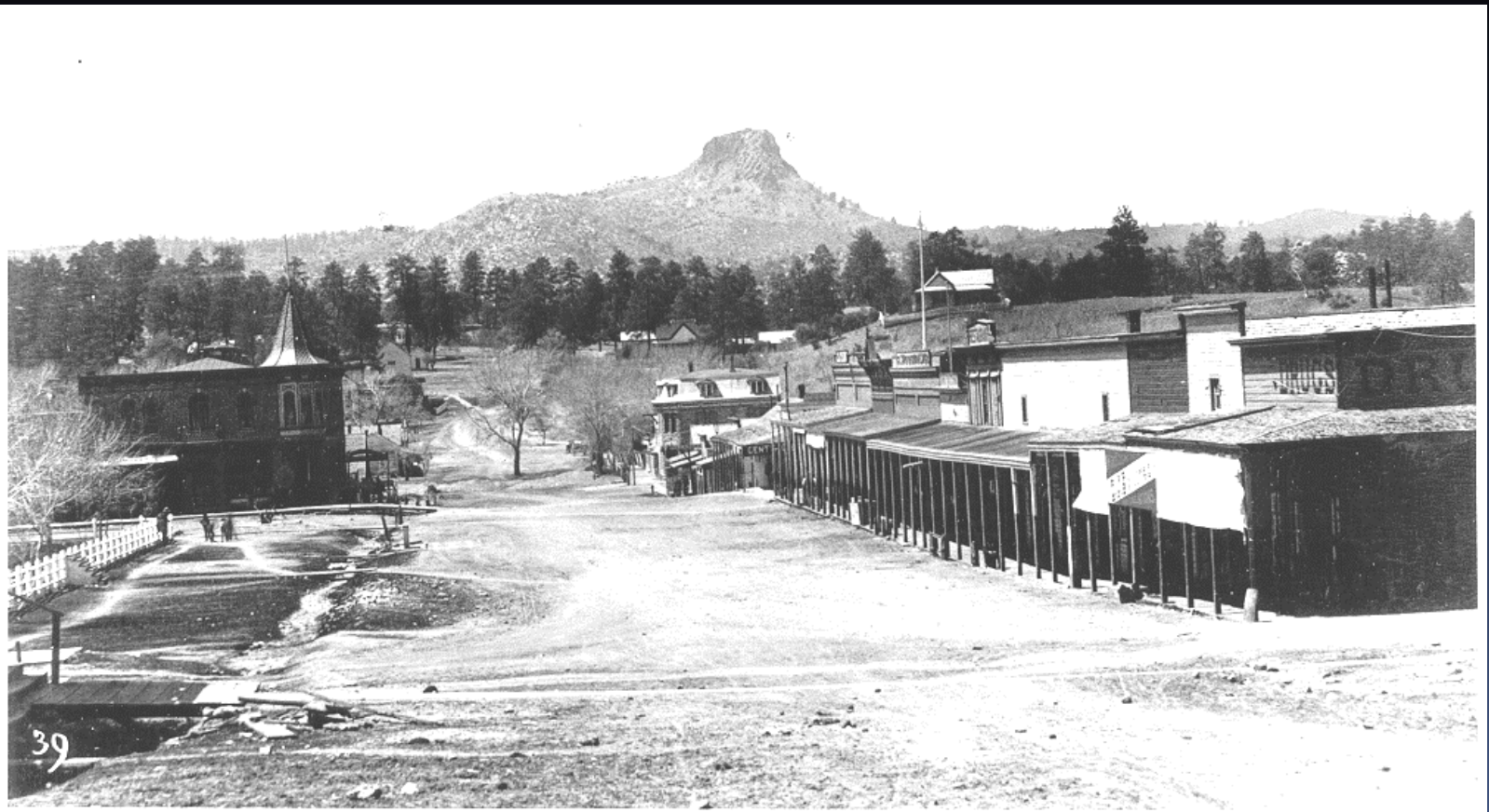
Transportation of Groundwater Withdrawn in the Big Chino Sub-basin

Transportation must be done by a city or town to an *initial adjacent* AMA (Prescott AMA only)

There are two types of water that can be transported; water associated with historically irrigated acres (HIA) and water authorized under 45-555(E). Only the City of Prescott is allowed to transport water associated with settlement of the Yavapai-Prescott Indian water rights claims authorized by 45-555(E).

For HIA an annual transportation allotment is calculated based on number of HIA acres * 3 AF per acre; in any year amount cannot exceed 2X the allotment and cannot exceed 10X in any period of ten consecutive years.

For 45-555(E), the statutory limit is 14,000 AF. A final ADWR determination regarding the volume has not yet been issued. A preliminary opinion stated 8,717 AF.



Gurley Street , Prescott Arizona, circa 1885

Image provided by Sharlot Hall Museum

Prescott AMA

Virtual Tour

Gurley Street , Prescott Arizona, 2000